The Contribution of the World Health Organization to a New Public Health and Health Promotion

The author traces the development of the concept of health promotion from 1980s policies of the World Health Organization. Two approaches that signify the modernization of public health are outlined in detail: the European Health for All targets and the settings approach. Both aim to reorient health policy priorities from a risk factor approach to strategies that address the determinants of health and empower people to participate in improving the health of their communities.

These approaches combine classic public health dictums with "new" strategies, some setting explicit goals to integrate public health with general welfare policy. Health for All, health promotion, and population health have contributed to this reorientation in thinking and strategy, but the focus of health policy remains expenditure rather than investment. (Am J Public Health. 2003;93: 383–388)

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IN 1986, AT AN INTERNATIONAL

conference held in Ottawa, Ontario, Canada, under the leadership of the World Health Organization (WHO) (and with a strong personal commitment from then Director General Halfdan Mahler), a broad new understanding of health promotion was adopted. The Ottawa Charter for Health Promotion has since exerted significant influence-both directly and indirectly-on the public health debate, on health policy formulation, and on health promotion practices in many countries. 1,2 The work on this document was spearheaded by the WHO European Regional Office and was developed over a period of 5 years of intensive research and debate. It was based on the "Health for All" philosophy,³ the Alma Ata Declaration,⁴ and the Lalonde health field concept.⁵

The Ottawa charter initiated a redefinition and repositioning of

institutions, epistemic communities, and actors at the "health" end of the disease-health continuum, a perspective that had been labeled the "salutogenic approach" by Aaron Antonovsky.⁶ In overcoming an individualistic understanding of lifestyles and in highlighting social environments and policy, the orientation of health promotion began to shift from focusing on the modification of individual risk factors or risk behaviors to addressing the "context and meaning" of health actions and the determinants that keep people healthy. The Canadian Lalonde report is often cited as having been the starting point of this new development. Recently the director of the Pan American Health Organization, Sir George Alleyne, reflected on this issue, stating that "it is perhaps not accidental that the impetus for the focus on health promotion for the many should have risen in Canada which is often credited with

maintaining a more egalitarian approach in all health matters."⁷

In its Health for All strategy, WHO positioned health at the center of development policy and defined the goal of health policy as "providing all people with the opportunity to lead a socially and economically productive life."3 It proposed a revolutionary shift in perspective from input to outcomes: governments were to be held accountable for the health of their populations, not just for the health services they provided. Lester Breslow, the father of the Alameda County study and one of the world's leading epidemiologists, had argued in 1985 that "the stage is set for a new public health revolution."8 The Ottawa charter echoed this challenge as well as the link to public health history in its subtitle, "The Move Towards a New Public Health."

Fourteen years later, in a commentary published in the *Journal* of the American Medical Associa-

tion, Breslow deemed the Ottawa charter the document that has best captured the essence of the third public health revolution by conceptualizing health as a "resource for living" and shifting the focus from disease prevention to "capacity building for health." In many parts of the world, influenced in particular by WHO and the Pan American Health Organization, health promotion has come to be understood not only as an approach that moves "beyond health care" but also as a commitment to social reform and equity. The Pan American Health Organization included the categories of the Ottawa charter in its 2001 annual report, and the director's message stated: "For an organization devoted to health, such as ours, the main strategies of health promotion can find application in almost all aspects of our work."7

The Ottawa charter frames health as a resource that is created in the context of everyday life and defines health promotion as "the process of enabling people to increase control over, and to improve their health." It defines health as "a resource for everyday life, not the objective of living." It adds that "health is a positive concept emphasizing social and personal resources, as well as physical capabilities." Following in the footsteps of the best traditions of public health and social medicine and making full use of the research on the impact of social factors on health, it links the production of health explicitly to "prerequisites for health" such as peace, income, and housing andmost important-defines health promotion as a process of empowerment and capacity building.

The charter outlines 5 key action areas that reinforce one another with the goal of improving

the health of populations: (1) the development of healthy public policies (policies supportive of health in sectors other than health), (2) the need to ensure environments supportive of health, (3) the importance of personal skills, (4) community action, and (5) the challenge of reorienting health services. A new mind-set and professional ethos are proposed for health professionals; their new role is to "enable, advocate, and mediate." This approach to health promotion found its dissemination and application through a number of channels. Here I focus on 2 of these channels: the European health targets and the settings approach.

THE WHO "HEALTH FOR **ALL" TARGETS**

The most important avenue for the spread and recognition of a broad understanding of health promotion was the adoption of 38 Health for All targets by the member states of the European region of WHO in 1984.3 In essence, these targets followed the Lalonde health field concept⁵ with one important distinction: the section on "lifestyles and health" did not focus on lifestyles as individual behavior changes but opted to integrate several components of the Lalonde concept in a composite approach. A paper presented at the 1983 meeting of the WHO Regional Committee of the European Region had already made the point that lifestyles needed to be understood as collective behaviors deeply rooted in context. 10 This thinking was very different from the second major influence on the work of the WHO Regional Office, the "management by objective" approach applied in the Healthy People 2000 goals and

objectives in the United States,11 which involved commitment to a focus on individual behavior modification.

Finally, 2 sets of "lifestyles" targets were developed, one following the US "reduction of disease" model and the other following a "social model of health" approach. An advisory group of WHO European member states decided to move ahead with the latter, and the compromise was a package of 5 lifestyles and health targets that addressed healthy public policy, social support systems, knowledge and motivation, positive health behavior, and health-damaging behavior. While still addressing individual behaviors, the advisory group zeroed in on the interactions between individuals and their environments and on the political instruments needed to address health determinants. The group aimed to expand the territory of health into other policy arenas and highlighted the complex political and social processes necessary to achieve changes in health. This approach was strengthened in subsequent revisions of the targets in 1991 and 1998. 12,13

As a matter of policy and principle, the 5 lifestyle targets were always grouped as a "package," and a new division was created within the organization to support their implementation. The working group preparing the lifestyles targets also exerted considerable influence on the nature of the European target document by proposing-as early as 1982-targets for social determinants of health. These targets were not included in the final document, but the group did succeed in gaining support for an equity in health target.

The decision to move in a direction that was quite different from the approach chosen in the

United States can be understood only by keeping in mind the strong link between public health and social reform in European public health history-the work of Villermé, Virchow, Chadwick, and Engels, to name but a fewand the role of the state in the provision of health and social services in the European region. This decision built as well on intellectual traditions in the social sciences, particularly Max Weber's understanding of lifestyles as a collective social category and Emile Durkheim's understanding of the social determinants of health as developed in his classic 1970 study, Suicide. Recently this understanding of lifestyles as residing at the intersection between personal and social factors 10 has been further expanded and developed as "collective lifestyles" by Frohlich and Potvin.¹⁴ They too argue that collective lifestyles should be conceptualized as a group attribute resulting from the interaction between social conditions and behavior.

The European Health for All targets provided the new resourcebased health promotion approaches a visibility far beyond the individual program and projects. Through these targets, health promotion gained legitimacy and influence and created the positive political environment for the adoption of the Ottawa charter in 1986. To date, 27 European countries have formulated health targets using the WHO policy as a starting point, as have regions, provinces, and cities. 15,16

The most recent such attempt at the national level upholds the original orientation developed in the Ottawa charter and the WHO policy. A report published in 2001 by the Swedish National Committee for Public Health¹⁷ (a

parliamentary committee established in 1997) identified 6 main areas of strategic intent that, in effect, set both a health promotion and a health determinants agenda: (1) strengthening social capital, (2) ensuring that children grow up in a satisfactory environment, (3) improving workplace conditions, (4) creating a satisfactory physical environment, (5) stimulating health-promoting life habits, and (6) developing a satisfactory infrastructure for health issues. Gunnar Ågren, director-general of the Swedish National Institute of Public Health, described the essence of the Swedish targets as being oriented toward health determinants rather than health behaviors.18 This "new order" was, to a certain degree, a response to Leonard Syme's 19 repeated challenges for a new categorization of health action not based on disease categories.

It must be kept in mind, though, that while the charter and its "ecological" orientation were widely adopted, the practice of health promotion frequently continued to focus on individual behavior change, in part because its institutional base tended to be in health education. Many proponents of health promotion as a "new public health" based more on social determinants were therefore encouraged when the population health movement emerged in Canada at the beginning of the 1990s, because it provided strong arguments for a focus on social and economic determinants and for investments in the sectors that "produce health," such as education, income, and housing.²⁰ But population health, as the "next new thing," included very little mention of health promotion, and the chance to forge a strong alliance was lost.

In 1998, WHO's Regional Office for Europe published a detailed report exploring the intersection between population health and the Health for All strategy.21 It underlined that the common ground between population health, Health for All, and health promotion resides in the recognition that the majority of health determinants reside outside the health sector and drew attention to the strategic competence and experience that health promotion is able to bring to the table. The more recent target documents of WHO have reinforced the commitment to address health determinants and to seek strategic entry points outside of the health sector. For example, according to WHO's recent Health 21 document 13:

[W]hether one is a government minister, city mayor, company director, community leader, a parent or individual, Health 21 can help develop action strategies that will result in more democratic, socially responsible and sustainable development. Health is a powerful political platform.

At the same time, the European document has strengthened the commitment to values such as equity, participation, solidarity, sustainability, and accountability, a point often considered a weakness of the population health debate, which focuses on an economic rather than a humanistic rationale. A subtle change can also be seen in the new *Healthy People 2010* goals and objectives of the United States, which now include goals related to supportive environments.

THE SETTINGS APPROACH

Developing health targets (or health goals and objectives, in

the preferred US terminology)at whatever level of governance, from organizational to international-is one mechanism of agreeing on common goals and direction, providing a "common context of interpretation" and broadening the legitimacy base for critical choices in health. The target development process in itself, if broadly conceived and implemented in partnerships beyond the health sector, produces "bridging capital."²² Commitment to collaboration becomes a "categorical imperative," and, as a consequence, new strategic roles emerge for public health departments, health agencies, and health professionals. This is a point repeatedly underlined in comparative analyses of health targets.12 One such challenge, for example, is how to transfer knowledge regarding what creates health and how to organize collective learning regarding how to produce health as an overall systems goal, not just a responsibility of the health sector. Governance theories stress the importance of "meso" institutions and mediating structures, which allow the dialogue between all parties to evolve and serve as a center of social learning.23

This shift in orientation and purpose found its strategic expression in the settings approach, the second major innovation introduced by the WHO European Regional Office in the field of health promotion.^{24,25} This approach spearheaded a number of initiatives that sought to engage other actors in health, and it did so by creating a new dissemination strategy through networks. In the early 1980s, the WHO European Regional Office began to work with cities and local authorities, universities, and professional organizations, along with

regions, companies, schools, prisons, and hospitals, to create networks of commitment and diffusion. These networks carried the new health policy message to a range of collaborators in other sectors, organizations, and all levels of governance. Through a myriad of meetings, consultations, publications, and other formal and informal mechanisms, an international learning process was set up for the new concept of health promotion. Page 1975

The key strategic point of the settings approach was to move health promotion away from focusing on individual behaviors and communities at risk to developing a strategy that encompasses a total population within a given setting. This followed the thinking of Geoffrey Rose31 that an effective and sustainable public health strategy must lower the risk of the majority of individuals, not only those at the tail end of the distribution. The target of the intervention therefore moves from individuals or groups of individuals to their environments, the "settings of everyday life." The strategic objective becomes the strengthening of resources for health. The innovation of health promotion has been to include the participatory process and empowerment as part of the strategic objectives. Indeed, Rootman et al.32 claimed that "unless empowerment is part of the strategy it cannot be called health promotion."

In 1987, the WHO Healthy Cities project was launched with the explicit aim of localizing the Health for All strategy by involving political decision makers in cities throughout Europe and by building a strong lobby for public health at the local level. What began with 11 designated WHO cities soon became a widespread "new public health movement" in

which several hundred cities around the world engaged in new types of public health approaches.33 The leaders of the project ventured that health was not something separate to be implemented by public health departments, and they challenged each social actor in the community, the private sector, the nongovernmental sector, the faith community, and the various sectors of city government to contribute to health and work with others in an "organized community effort," as expressed in the definition of public health of C.E.A. Winslow.34

Anthony Giddens, the British sociologist and recent director of the London School of Economics, coined the phrase "life politics" to refer to this kind of integrative approach. He postulated that we cannot continue to divide the way we do politics into vertical streams of action: separating, for example, social policy, health policy, and economic policy.35 According to Giddens, the question faced in 21st-century politics is "How do we want to live our lives?" Accordingly-and following the WHO definition of health-the 11 qualities of a healthy city developed by the project are related to well-being and quality of life.36

To be recognized, cities had to fulfill a number of conditions set by WHO³⁷; for example, they had to commit to a health plan, create an intersectoral committee for health, establish a Healthy Cities office and appoint a coordinator, develop a city health profile, and involve citizens and community groups. The project advocated partnership and network-based approaches of change management to allow creation of political commitment, generate visibility for health issues, embark

on institutional change, and create space for innovative health action. Diffusion of knowledge and exchange of information were ensured through regular meetings of all European cities involved in the project, as well as through national and regional networks. Cities were supported in developing indicators and policies, and a mechanism called the "multi-city action plan" was introduced that focused on priority health issues such as equity, traffic, tobacco, the elderly, mental health, and AIDS care.

The project continues to this day. There is now a strong focus on cities in Central and Eastern Europe, and the practical experience accumulated in the cities has become a source of inspiration for local health action around the world. WHO has engaged in regular project evaluations and reviews.33 The approach has been particularly successful in the Americas, where, with the encouragement of the Pan American Health Organization, a strong "healthy municipalities network" has evolved that includes hundreds of cities.³⁸ In the United States, the Coalition for Healthy Cities and Communities (http://www.healthycommunities.org) has based its work on the WHO approach.

Following the Healthy Cities project, other settings approaches were developed by the WHO Regional Office for Europe: health-promoting schools, health-promoting workplaces, health in prisons, healthy universities, and health-promoting hospitals. In all of these projects, the key intention has been to gain a "political" commitment to improving the health of the entire organization (a systems approach) and developing strategies that allow all parts of the organization to work

together to improve the health of the setting. The settings projects have caught the imagination of many actors in many countries, with and without WHO support. What they achieve does not fit easily into an epidemiological framework of "evidence" but needs to be analyzed in terms of social and political processes.

Ways in which to approach the evaluation of settings programs have been outlined in a number of recent publications.^{25,32,39} Such projects fulfill many of the criteria for "promising interventions" developed in the recent Institute of Medicine report focusing on health promotion.40 Strategically, their achievement has been to move health out of the professional action frame into organizations and the community ("the context of everyday life" in the language of the Ottawa charter) and to frame health in terms of relevance to people and communities.

This active role of citizens and the community is central to the settings approach. The Ottawa charter definition of health promotion—"the process of enabling people to increase control over their health"-partly took its lead from the health definitions of the major social movements of the 1970s and 1980s (e.g., the women's health movement, the selfhelp movement, and the gay rights movement). Some authors, for example Petersen,41 contend that this is not a move toward empowerment but an increased privatization of risk. However, Paquet²³ argues that the new health governance is only possible as a new type of social contract between the "strategic state" and "active citizens," which in turn reflects an understanding of health as a co-produced good within the structure of everyday life.

For example, a recent English health target document⁴² (although its targets are structured around disease categories) presents itself as an intersectoral challenge for the whole of government, not just the health sector. It regards health as a "national contract" and a 3-way partnership between individuals, communities, and the government. The document then clearly lays out the responsibilities of each partner under each respective target. The health promotion approach advocated by the Ottawa charter implies that health is produced in the dynamic exchange between people and their environments. Social determinants are considered central to health creation, but at the same time people are recognized as social actors who can effect change. Indeed, the very process of involvement is considered health promoting in that it creates (for example) self-esteem, a sense of worth, and social capital.

THE THIRD PUBLIC HEALTH REVOLUTION

The first public health revolution addressed sanitary conditions and fought infectious diseases; the second public health revolution focused on the contribution of individual behaviors to noncommunicable diseases and premature death. The third public health revolution recognizes health as a key dimension of quality of life. Health policies in the 21st century will need to be constructed from the key question posed by both the health promotion and population health movements: "What makes people healthy?" Health policies will need to address both the collective lifestyles of modern societies and the social environments of modern life as

they affect the health and quality of life of populations.

The 6 key areas of the new Swedish policy outlined earlier show the commitment to base a modern health policy on health determinants and indicate at the same time that we need both the analytical dimensions of population health research and the cumulative experience of health promotion practice to move ahead. Priority should be given to building healthy communities and healthy workplaces, strengthening the wide range of social networks for health, and increasing people's capabilities to lead healthy lives. The development of tools such as environmental, social, economic, and, most recently, health "impact assessments"43,44 (or the "Verona benchmark," which relates to best practices in partnership building⁴⁵) underlines the fact that assessments of accountability need to involve both cross-sector effects and externalities.

Population health research such as the work of Keating and Hertzman⁴⁶ helps situate policy reorientation in a wider societal context. In late modern societies, health will again-as in the first public health revolution-play a central role in wealth creation, and nation-states will need to invest in human and social capital if they are to remain competitive on a global scale. According to Keating and Hertzman, "The wealth of nations in the Information Age may depend heavily, perhaps primarily, upon their ability to promote the developmental health of their populations." From a health promotion perspective, this argument is important but not sufficient; its goal resides in well-being and quality of life.

It is this orientation that has led Swedish health policymakers to set the explicit goal of integrating public health with general welfare policy. Health for All, health promotion, and population health have all contributed to a reorientation in thinking and strategy, yet the focus of health policy remains medical care expenditures rather than investment in health determinants. ⁴⁷ It is in the realm of politics, however, that the key question must be resolved: What amount of resources does a society want to invest in health and quality of life, and who should pay?

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References

- 1. Ottawa Charter for Health Promotion. In: *Health Promotion*. Vol. 1. Geneva, Switzerland: World Health Organization; 1986:iii–v.
- 2. Kickbusch I. Perspectives on health governance in the 21st century: revisiting health goals and targets. In:
 Marinker M, ed. *Health Targets in Europe: Polity, Progress and Promise.* London: BMJ Books; 2002:206–229.
- 3. Health for All Targets. Copenhagen, Denmark: World Health Organization; 1984
- 4. The Alma Ata Declaration. Geneva, Switzerland: World Health Organization: 1978.
- 5. Lalonde M. *A New Perspective on the Health of Canadians*. Ottawa, Ontario, Canada: Information Canada; 1974.
- 6. Antonovsky A. *Unraveling the Mystery of Health: How People Manage Stress and Stay Well.* San Francisco, Calif: Jossey-Bass; 1987.
- Alleyne G. The director's message.
 In: Pan American Health Organization Annual Report 2001. Washington, DC:
 Pan American Health Organization;
- Breslow L. A prevention strategy:

- toward health in the year 2000. *Health Med.* 1985:3:43–44.
- 9. Breslow L. From disease prevention to health promotion. *JAMA*. 1999; 281:1030–1033.
- 10. Kickbusch I. Lifestyles and health. *Soc Sci Med.* 1986;2:117–124.
- 11. Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention. Washington, DC: US Dept of Health, Education, and Welfare; 1979.
- 12. Van de Water HPA, van Herten LM. Health Policies on Target? Review of Health Target and Priority Setting in 18 European Countries. Leiden, the Netherlands: Netherlands Organization for Applied Scientific Research; 1998.
- 13. Health 21—Health for All in the 21st Century. Copenhagen, Denmark: World Health Organization; 1999.
- 14. Frohlich KL, Corin E, Potvin L. A theoretical proposal for the relationship between context and disease. *Sociol Health Illness.* 2001;23:776–797.
- Proceedings of the International Workshop on Target Setting, Brussels,
 9 March 1966. Brussels, Belgium: European Public Health Center; 1966.
- 16. Goumans M, Springett J. From project to policy—"healthy cities" as a mechanism for policy change for health? Health Promotion Int. 1997;12:311–377.
- 17. Swedish National Committee for Public Health. *Health on Equal Terms—National Goals for Public Health.* Stockholm, Sweden: Ministry of Health and Social Affairs; 2000.
- 18. Ågren G. The new Swedish public health policy. Available at: http://www.fhi.se/In. Accessed January 6, 2003.
- 19. Syme SL. To prevent disease: the need for a new approach. In: Blane E, Brunner E, Wilkinson R, eds. *Health and Social Organisation: Towards Health Policy for the 21st Century.* London, England: Routledge; 1996:22–31.
- 20. Evans RG, Barer ML, Marmor TR, eds. *Why Are Some People Healthy and Others Not?* New York, NY: Aldine de Gruyter; 1994.
- 21. Zoellner H, Lessof S. *Population Health—Putting Concepts Into Action.* Copenhagen, Denmark: World Health Organization Regional Office for Europe; 1998
- 22. Putnam R. Bowling Alone: The Collapse and Revival of American Community. New York, NY: Simon & Schuster; 2000.
- 23. Paquet G. The new governance, subsidiarity and the strategic state. In: *Governance in the 21st Century.* Paris, France: Organisation for Economic Co-

- operation and Development; 2001: 183–208.
- 24. Kickbusch I. Health promoting environments: the next steps. *Aust N Z J Public Health.* 1997;21:431–434.
- 25. Poland BD, Green L, Rootman I. Settings for Health Promotion: Linking Theory and Practice. London, England: Sage Publications; 2000:1–43.
- 26. Burgher M, Rasmussen VB, Rivett D, eds. *The European Network of Health Promoting Schools: The Alliance of Health and Education*. Copenhagen, Denmark: World Health Organization Regional Office for Europe; 1999.
- 27. Demmer H. Worksite Health Promotion: How to Go About It. Copenhagen, Denmark: World Health Organization Regional Office for Europe; 1995. European Health Promotion Series 4.
- 28. Pelikan JM, Garcia Barbero M, Lobnig H, Krajic K, eds. *Pathways to a Health Promoting Hospital*. Gamburg, Germany: Conrad Verlag; 1998.
- 29. Tsouros A, Dowding G, Thompson J, Dooris M. Health Promoting Universities: Concept, Experiences and Framework for Action. Copenhagen, Denmark: World Health Organization; 1998.
- 30. Whitelaw S, Baxendale A, Bryce C, MacHardy L, Young I, Witney E. "Settings" based health promotion: a review. *Health Promotion Int.* 2001;16: 339–354.
- 31. Rose G. *The Strategy of Preventive Medicine*. Oxford, England: Oxford University Press Inc; 1992.
- 32. Rootman I, Goodstadt M, Hyndman B, et al., eds. *Evaluation in Health Promotion: Principles and Perspectives*. Copenhagen, Denmark: World Health Organization; 2001.
- 33. De Leeuw E. Healthy cities: urban social entrepreneurship for health. *Health Promotion Int.* 1999;14:261–269.
- 34. Winslow CEA. Winslow's definition of public health. In: *Encyclopedia Britannica*. Vol. 15. London, England: Encyclopedia Britannica Inc; 2001:740.
- 35. Giddens A. Modernity and Self Identity: Self and Society in the Late Modern Age. Cambridge, England: Polity Press; 1991.
- 36. Hancock T, Duhl L. *Promoting Health in the Urban Context*. Copenhagen, Denmark: World Health Organization, 1088
- 37. Healthy Cities Project: Five Year Planning Framework. Copenhagen, Denmark: World Health Organization; 1988.
- 38. *Healthy Municipalities*. Washington, DC: Pan American Health Organization; 2000.

- 39. Nutbeam D. Evaluating health promotion. *Health Promotion Int.* 1998;13: 27–44.
- 40. Promoting Health: Intervention Strategies From Social and Behavioral Research. Washington, DC: Institute of Medicine; 2000.
- 41. Petersen AR. Risk and the regulated self: the discourse of health pro-
- motion as politics of uncertainty. Aust NZJ Sociol. 1996;32:44–57.
- 42. Hunter DJ, Fulop N, Warner M. From "Health of the Nation" to "Our Healthier Nation": A Case Study From England. Brussels, Belgium: World Health Organization European Center for Health Policy; 2000.
- 43. Health Impact Assessment: Main
- Concepts and Suggested Approach. Brussels, Belgium: World Health Organization European Center for Health Policy; 1999.
- 44. Health impact assessment. *Promotion Educ.* 2001;7(theme issue).
- 45. McMahon L, Harvey S, Zigio E, Arnell G. Using the investment triangle—towards process guidelines. Available at:
- http://www.who.dk/Verona/main.htm. Accessed November 11, 2000.
- 46. Keating DP, Hertzman C. *Developmental Health and the Wealth of Nations*. New York, NY: Guilford Press; 1999.
- 47. Levin SL, Ziglio E. Health promotion as an investment strategy: considerations and theory and practice. *Health Promotion Int.* 1996;11:33–40.